Presented at the DLSU Research Congress 2014
De La Salle University, Manila, Philippines

March 6-8, 2014

Teaching socially responsible strategic management through a computer-based business simulation game

Denver D. Daradar and Benito L. Teehankee*
Management and Organization Department, De La Salle University
**Corresponding Author: benito.teehankee@dlsu.edu.ph*

Abstract: Several business schools from around the world have joined a movement called Principles for Responsible Management Education (PRME) initiated by the United Nations to reform the teaching of business towards emphasizing social responsibility and sustainability. De La Salle University (DLSU) became a signatory to PRME in 2008. A key commitment to PRME is expressed in Principle 3, i.e., "Method: We will create educational frameworks, materials, processes and environments that enable effective learning experiences for responsible leadership." Business simulation games have been used for more than 40 years. More recently, business faculty have been actively using computer-based games as part of their teaching methodology. In fact, the trend has been for the simulator to be the main activity in the business course, especially in strategy courses. Despite the substantial literature on educational business games, little mention has been made on how it can be used to teach socially responsible business practice. This paper addresses this research gap by describing the use of the Capitalism 2 computer-based business simulation to teach socially responsible strategic management in the undergraduate level in De La Salle University. The simulation has been used both within class and through an inter-class tournament. The intended learning outcome is that students will be able to pursue business strategy which will deliver quality products to customers, create jobs and continuously invest in the development of employees while achieving superior long-term financial returns. Student feedback on the experience is reported and recommendations for future educational use are given.

Key Words: computer-based business simulation; social responsibility; teaching strategic management

1. INTRODUCTION

1.1 Background and motivation

Several business schools from around the world have joined a movement called Principles for Responsible Management Education (PRME) initiated by the United Nations to reform the teaching of business towards emphasizing social responsibility and sustainability. De La Salle University (DLSU) became a signatory to PRME in 2008. A key commitment to PRME is expressed in Principle 3, i.e., "Method: We will create educational

frameworks, materials, processes and environments (underscoring added) that enable effective learning experiences for responsible leadership."

1.2 Literature review

Business simulators have been used for business education for more than 40 years and in various modes (Borrajo, Bueno, De Pablo, Santos, Fernandez, Garcia, & Sagredo, 2010; Maier & Großler, 2000). More recently, business faculty have been actively using computer-based games as part of their teaching methodology. In this regard, the trend has been for the simulator to be the main activity in the business course, especially in strategy courses (Faria, Hutchinson, Wellington & Gold, 2009). Interestingly, no mention has been made in the literature on how simulations can be used to teach socially responsible business practice. This prompted the authors to address this research gap.

Another source of pedagogical support for the use of simulations is adult learning theory. The key premises of adult learning theory are shown below (Knowles as cited in Whitton, 2010):

- Adults need to know why they need to learn something before they are willing to invest time and energy in learning it. They will not necessarily be motivated to learn something simply because they are told to, so a clear purpose for a learning activity is essential.
- Adults need to be in charge of their own learning and to take increased responsibility for what, where, when and how they study, as well as understanding the process of learning itself. Learning needs to be increasingly learner-centred as students become more autonomous.
- Adults come from a wide variety of backgrounds and have different ranges of experience. Learning activities need to be designed to take into account, and exploit, this diversity.
- Adults become ready to learn when they need to apply a skill or knowledge to the real world to be able to cope effectively with real-life situations. Application of learning to the real world is paramount for motivation, and also aids retention of knowledge and skills.
- Adults are task-focused and learn things best in the context of using learning activities to achieve outcomes they want to accomplish.

Simulations have also been used to develop higher order thinking and applied learning (Anderson & Lawton, 2009; Springer and Borthick, 2004). The use of simulations supports Understanding by Design (Wiggins & McTighe, 2005) which has been adopted as the pedagogical framework in DLSU. This framework prioritizes the achievement of intended learning outcomes in the teaching of the course. In the case of a strategic management course, this would mean the ability to make multi-functional business decisions in order to achieve broad strategic business goals. In other words, the learning is not limited to the learning of conceptual definitions or theories but in the application of these in real or realistic business situations (Lainema & Nurmi, 2006). In the case of undergraduate students who have never been involved in a business organization, simulations are helpful in giving business-based situations for applied decision-making.

This use of simulators is also consistent with outcomes-based education which is the policy regime of the country's Commission on Higher Education. The current national policy on outcomes- based educations (Commission on Higher Education, 2012) states that "at the institutional level, the vision and mission of the institution ... should guide its definition of desired outcomes, especially its graduates competencies and qualities ...." DLSU's vision-mission is to be "A leading learner-centered research university, bridging faith and scholarship in the service of society, especially the poor". Thus, it becomes important for the university to produce graduates who can make business decisions that are socially responsible.

1.3 Research problem

Given the mission and pedagogical thrusts of the university and its PRME commitments, it was deemed beneficial to explore the pedagogical use of a business simulator in the strategic management course for undergraduates. This decision was also supported by the following considerations:

- Internet cafes abound surrounding the university campus. Observation visits showed that all these cafes offer games involving warfare or violent role playing. None offered business games, thus making it opportune for the university to advocate the introduction of business games which can benefit the education of students. This also made it feasible to have network-based competitions among students without laborious preparations in the university's computer laboratories.
- Business simulations tended to be expensive previously. Capitalism 2 became available as an inexpensive download at $2.99 making it feasible as a class requirement for all students of strategic management.
- Most students own laptops and they can be requested to bring these in class for the use of the simulator.

In light of the university's educational advocacy and identified literature gap on the use of simulations for social responsibility business education, this paper explores the following research questions:

1 How will undergraduate business students respond to social responsibility teaching when exposed to a business-simulator game?
2 What insights will they derive? What meanings do they attribute?
3 How do conceptual principles transfer to their performance in the simulation?
4 What challenges do they face?

2. METHODOLOGY

The paper used an exploratory qualitative approach to surfacing and analyzing student reactions and insights on the use of a business simulator for learning strategic management towards encouraging socially responsible strategic thinking.

The Capitalism 2 business simulator was created by Enlight Corporation and has been used for teaching purposes at Harvard Business School, Stanford University, Duke University, the University of North Carolina, among others (http://www.enlight.com/capitalism2/Cap2_in_Education.html). It enables student teams to compete with other student teams or computer-competitors.

Figure 1 shows the simulator screen showing summary financial performance data for competitors. Both numerical and graphical information are displayed. In this case, each competitor's cash balance, annual revenue and annual profit are displayed. The simulator provides more detailed performance information through the menu choices on the left panel, ranging from profit margins per product, number of employees, technology advancement, etc.

Fig. 1. Summary financial performance screen in the Capitalism 2 business simulator

Figure 2 shows the extensive marketing information made available by the simulator, ranging from pricing, market share, customer preferences, competitor information, brand and quality status, etc.

Fig. 2. Summary market performance screen in the Capitalism 2 business simulator

The illustrative screens above show the extensive and diverse types of information that students need to consider in making decisions when using the business simulator. This is supportive of the intended learning outcomes for the strategic management course.

With respect to incorporating social responsibility principles, students were oriented to achieve diverse business performance dimensions when using the simulator. Table 1 shows the performance dimensions, sub-dimensions and indicators for the students using the business simulator, especially in the tournament mode. In addition to traditional returns to shareholders represented by return on equity, students must offer good products, provide jobs, develop employees for work efficiency and achieve teamwork with the teams when they decide as managers. Total performance is assessed as a weighted composite of performance under all the dimensions.

Table 1. Performance scoring matrix for business simulator

Performance dimension	Sub-dimension	Indicators and standards
Offering good products (20%)	Healthy	Avoids cigarettes?
	Improve quality	% of products with quality 80 and better
Providing jobs (20%)	Hiring	at least 500 employees
Developing employee competence (20%)	Unit efficiency through training	% operating units >=6/10 efficient
Achieving return on equity (20%)		ROE at least 10%
Teamwork (20%)	Performing functions in collaboration	Observation rating

Students were exposed to the use of the business simulator both in the classroom (Figure 3) and through an inter-class tournament (Figure 4). At the end of both applications, students were asked to submit reflection papers in order to allow the authors to look at the meanings students associate with their experiences in using the business simulator.

Fig. 3. Students in the strategic management class using the business simulator in the classroom

Fig. 4. Representative student teams from strategic management classes competing against each other using the business simulator in tournament mode at an Internet cafe.

3. RESULTS AND DISCUSSION

Given the exploratory nature of this paper and the limited space available, only illustrative reflections of the students will be presented followed by thematic reflections of students based on the research questions.

Of the 45 students who played the game in one section, 33 participated in the research and shared their insights from the simulation. On post-game reflection, some students noted the importance of employee development and quality products and services. One said, "I told them (the group) that in every city we need to build three retail stores offering four different products and making sure our "training" for employees was excellent. … If I were to play the game again, I will stick on (sic) the strategy that I come up with, because for the time that I played it in class, I already know what my strategy was (good employees, lots of retail store, producing good and affordable products and selling it fair) and when I applied the strategy that I have created-it gives results that I wanted."

Other students have reflected on the importance of growing the business, of related diversification as a means of gaining cost and raw material quality advantages, and of managing the business in detail as opposed to adopting a laissez-faire approach borne out of complacency over initial business success.

However, all the students still felt the pressure of attaining financial success, suggesting that traditional measures continue to dominate the decision-making processes of business students.

With respect to the students' general response to the use of the simulation to achieve several performance dimensions, they tended to approach the simulation as a general business challenge to achieve financial goals, i.e., to focus on market and financial performance. It is rare for students to give equal attention to the various performance dimensions.

With respect to insights and meanings they derived, there is broad diversity in student reflections as indicated by the illustrative insights above. While some derive deeper meaning in their role as multi-dimensional managers,

With respect to strategic principles applied in performing in the simulation, a growth and diversification strategy is a recurrent theme.

The main challenge faced by students is the need to process large amounts of information under time pressure to make decision. Their ability to do this well was heavily conditioned by their mastery of the simulation interface.

4. CONCLUSIONS

The paper showed that the use of a business simulator has potential as a method for applying outcomes-based pedagogy in teaching socially

responsible strategic management to undergraduate students. The achievement of intended learning outcomes is not easily accomplished, however, with some students internalizing the need for multi-dimensional thinking while some students focusing their immediate attention predominantly on financial performance considerations. This is perhaps a natural result of the time and market pressure that the simulation engenders. Future implementations will need to provide better training and priming for students to think in broader terms under such demanding conditions.

5. REFERENCES

Anderson, P.H. & Lawton, L. (2009). Business simulations and cognitive learning: Developments, desires, and future directions. *Simulation Gaming, 40,* 193-216.

Borrajo, F., Bueno, Y., De Pablo, I., Santos, B., Fernandez, F., Garcia, J., & Sagredo, I. (2010). SIMBA: A simulator for business education and research. *Decision Support Systems, 48*(3), 498-506.

Commission on Higher Education. (2012). Policy standard to enhance quality assurance (QA) through and outcomes-based and typology-based QA. Retrieved from http://www.ched.gov.ph/wp-content/uploads/2013/07/CMO-No.46-s2012.pdf

Faria, A.J., Hutchinson, D., Wellington, W.J. & Gold, S. (2009). Developments in business gaming: A review of the past 40 years. *Simulation Gaming, 40*, 464.

Ke, F. (2009). A qualitative meta-analysis of computer games as learning tools. In *Gaming and Simulations: Concepts, Methodologies, Tools and Applications,* Volume 1, (pp. 1-32). IGI Global.

Lainema, T. & Nurmi, S. (2006). Applying an authentic, dynamic learning environment in real world business. *Computers & Education, 47*, 94–115.

Maier, F. H. & Großler, A. (2000). What are we talking about? A taxonomy of computer simulations to support learning. *System Dynamics Review, 16*(2), 135-148.

Springer, C. W. & Borthick, A. F. (2004). Business simulation to stage critical thinking in introductory accounting: Rationale, design and implementation. *Issues in Accounting Education, 19*(3), 277-303.

Whitton, N. (2010). *Learning with digital games: a practical guide to engaging students in higher education.* New York: Routledge.

Wiggins, G. & McTighe, J. (2005). *Understanding by design (2nd edition).* Upple Saddle River: NJ:Pearson.